

SEQUENCE LISTING

<110> Alexandra Charlesworth
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 John Baird
 Keith Linder

<120> ISOLATION OF THE LAMININ Y2 GENE IN
 HORSES AND ITS USE IN DIAGNOSING JUNCTIONAL EPIDERMOLYSIS
 BULLOSA

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Met Pro Ala Leu Trp Leu Ser Cys Tyr Leu Cys	
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Phe Ser Leu Leu Leu Pro Ala Ala Arg Ala Thr Ser Gly Arg Glu Val	
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Cys Asp Cys Asn Gly Lys Ser Arg Gln Cys Ile Phe Asp Gln Glu Leu	
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His Lys Gln Thr Gly Asn Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn	
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Arg Glu Arg Asp Arg Cys Leu Pro Cys Asn Cys Asn Ser Lys Gly Ser	
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 Thr Asp Ala Gly Cys Ala Gln Asp Gln Arg Leu Leu Asp Ser Lys Cys
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 Asp Cys Asp Pro Ala Gly Ile Ser Gly Pro Cys Asp Ser Gly Arg Cys
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 Val Cys Lys Pro Ala Val Thr Gly Glu Arg Cys Asp Arg Cys Arg Pro
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 Gly Tyr Tyr His Leu Asp Gly Gly Asn Pro Gln Gly Cys Thr Gln Cys
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 Phe Cys Tyr Gly His Ser Ala Ser Cys His Ser Ser Gly Asp Tyr Ser
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 Val His Lys Ile Ile Ser Ala Phe His Gln Asp Val Asp Gly Trp Lys
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 His Arg Asp Ile Phe Ser Ser Ala Arg Arg Ser Asp Pro Val Tyr Phe
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 Val Ala Pro Ala Lys Phe Leu Gly Asn Gln Gln Val Ser Tyr Gly Gln
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 Ser Leu Ser Phe Asp Tyr Arg Val Asp Arg Gly Gly Arg His Pro Ser
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 Ala His Asp Val Ile Leu Glu Gly Ala Gly Leu Arg Ile Thr Ala Pro
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Arg Ala Cys Asn Cys Asn Pro Val Gly Ser Glu Pro Val Glu Cys Arg	
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Tyr Val Gly Pro Asn Gly Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg	
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gcc act ttt tat gaa gtt gag aac atc tta aag aat ctc aga gag ttt			3062
Ala Thr Phe Tyr Glu Val Glu Asn Ile Leu Lys Asn Leu Arg Glu Phe			
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Asp Leu Gln Val Gly Asp Lys Arg Ala Glu Ala Glu Glu Ala Met Lys			
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Gln Glu Ile Gly Gly Leu Asn Leu Glu Ala Asn Val Thr Ala Asp Gly
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Arg Gln Lys Gly His Leu Arg Phe Leu Glu Thr Ser Ile Asp Gly Ile
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Pro	Ala	Ala	Arg	Ala	Thr	Ser	Arg	Arg	Glu	Val	Cys	Asp	Cys	Asn	Gly
			20					25					30		
His	Ser	Arg	Gln	Cys	Ile	Phe	Asp	Arg	Glu	Leu	His	Arg	Gln	Thr	Gly
			35				40					45			
Asn	Gly	Phe	Arg	Cys	Leu	Asn	Cys	Asn	Asp	Asn	Thr	Asp	Gly	Ile	His
						55					60				
Cys	Glu	Lys	Cys	Lys	Asn	Gly	Phe	Tyr	Arg	His	Arg	Glu	Arg	Asp	Arg
					70					75				80	
Cys	Leu	Pro	Cys	Asn	Cys	Asn	Ser	Lys	Gly	Ser	Leu	Ser	Ala	Arg	Cys
				85					90					95	
Asp	Asn	Ser	Gly	Arg	Cys	Ser	Cys	Lys	Pro	Gly	Val	Thr	Gly	Ala	Arg
			100					105					110		
Cys	Asp	Arg	Cys	Leu	Pro	Gly	Phe	His	Met	Leu	Thr	Asp	Ala	Gly	Cys
			115				120					125			
Thr	Gln	Asp	Gln	Arg	Leu	Leu	Asp	Ser	Lys	Cys	Asp	Cys	Asp	Pro	Ala
						135					140				
Gly	Ile	Ala	Gly	Pro	Cys	Asp	Ala	Gly	Arg	Cys	Val	Cys	Lys	Pro	Ala
				150						155				160	
Val	Thr	Gly	Glu	Arg	Cys	Asp	Arg	Cys	Arg	Ser	Gly	Tyr	Tyr	Asn	Leu
				165					170					175	
Asp	Gly	Gly	Asn	Pro	Glu	Gly	Cys	Thr	Gln	Cys	Phe	Cys	Tyr	Gly	His
			180					185					190		
Ser	Ala	Ser	Cys	Arg	Ser	Ser	Ala	Glu	Tyr	Ser	Val	His	Lys	Ile	Thr
			195				200					205			
Ser	Thr	Phe	His	Gln	Asp	Val	Asp	Gly	Trp	Lys	Ala	Val	Gln	Arg	Asn
					215						220				
Gly	Ser	Pro	Ala	Lys	Leu	Gln	Trp	Ser	Gln	Arg	His	Gln	Asp	Val	Phe
				230						235				240	
Ser	Ser	Ala	Gln	Arg	Leu	Asp	Pro	Val	Tyr	Phe	Val	Ala	Pro	Ala	Lys
				245					250					255	
Phe	Leu	Gly	Asn	Gln	Gln	Val	Ser	Tyr	Gly	Gln	Ser	Leu	Ser	Phe	Asp
			260					265					270		
Tyr	Arg	Val	Asp	Arg	Gly	Gly	Arg	His	Pro	Ser	Ala	His	Asp	Val	Ile
			275				280					285			
Leu	Glu	Gly	Ala	Gly	Leu	Arg	Ile	Thr	Ala	Pro	Leu	Met	Pro	Leu	Gly
			290			295					300				
Lys	Thr	Leu	Pro	Cys	Gly	Leu	Thr	Lys	Thr	Tyr	Thr	Phe	Arg	Leu	Asn

305					310					315				320	
Glu	His	Pro	Ser	Asn	Asn	Trp	Ser	Pro	Gln	Leu	Ser	Tyr	Phe	Glu	Tyr
				325					330					335	
Arg	Arg	Leu	Leu	Arg	Asn	Leu	Thr	Ala	Leu	Arg	Ile	Arg	Ala	Thr	Tyr
			340					345					350		
Gly	Glu	Tyr	Ser	Thr	Gly	Tyr	Ile	Asp	Asn	Val	Thr	Leu	Ile	Ser	Ala
		355				360						365			
Arg	Pro	Val	Ser	Gly	Ala	Pro	Ala	Pro	Trp	Val	Glu	Gln	Cys	Ile	Cys
	370					375					380				
Pro	Val	Gly	Tyr	Lys	Gly	Gln	Phe	Cys	Gln	Asp	Cys	Ala	Ser	Gly	Tyr
385					390					395					400
Lys	Arg	Asp	Ser	Ala	Arg	Leu	Gly	Pro	Phe	Gly	Thr	Cys	Ile	Pro	Cys
			405						410					415	
Asn	Cys	Gln	Gly	Gly	Ala	Cys	Asp	Pro	Asp	Thr	Gly	Asp	Cys	Tyr	
		420					425					430			
Ser	Gly	Asp	Glu	Asn	Pro	Asp	Ile	Glu	Cys	Ala	Asp	Cys	Pro	Ile	Gly
	435					440					445				
Phe	Tyr	Asn	Asp	Pro	His	Asp	Pro	Arg	Ser	Cys	Lys	Pro	Cys	Pro	Cys
	450					455					460				
His	Asn	Gly	Phe	Ser	Cys	Ser	Val	Met	Pro	Glu	Thr	Glu	Glu	Val	Val
465					470					475					480
Cys	Asn	Asn	Cys	Pro	Pro	Gly	Val	Thr	Gly	Ala	Arg	Cys	Glu	Leu	Cys
			485						490					495	
Ala	Asp	Gly	Tyr	Phe	Gly	Asp	Pro	Phe	Gly	Glu	His	Gly	Pro	Val	Arg
		500						505					510		
Pro	Cys	Gln	Pro	Cys	Gln	Cys	Asn	Asn	Asn	Val	Asp	Pro	Ser	Ala	Ser
	515						520					525			
Gly	Asn	Cys	Asp	Arg	Leu	Thr	Gly	Arg	Cys	Leu	Lys	Cys	Ile	His	Asn
	530					535					540				
Thr	Ala	Gly	Ile	Tyr	Cys	Asp	Gln	Cys	Lys	Ala	Gly	Tyr	Phe	Gly	Asp
545					550					555					560
Pro	Leu	Ala	Pro	Asn	Pro	Ala	Asp	Lys	Cys	Arg	Ala	Cys	Asn	Cys	Asn
				565					570					575	
Pro	Met	Gly	Ser	Glu	Pro	Val	Gly	Cys	Arg	Ser	Asp	Gly	Thr	Cys	Val
		580						585					590		
Cys	Lys	Pro	Gly	Phe	Gly	Gly	Pro	Asn	Cys	Glu	His	Gly	Ala	Phe	Ser
	595						600					605			
Cys	Pro	Ala	Cys	Tyr	Asn	Gln	Val	Lys	Ile	Gln	Met	Asp	Gln	Phe	Met
	610					615					620				
Gln	Gln	Leu	Gln	Arg	Met	Glu	Ala	Leu	Ile	Ser	Lys	Ala	Gln	Gly	Gly
625					630					635					640
Asp	Gly	Val	Val	Pro	Asp	Thr	Glu	Leu	Glu	Gly	Arg	Met	Gln	Gln	Ala
				645					650					655	
Glu	Gln	Ala	Leu	Gln	Asp	Ile	Leu	Arg	Asp	Ala	Gln	Ile	Ser	Glu	Gly
		660						665					670		
Ala	Ser	Arg	Ser	Leu	Gly	Leu	Gln	Leu	Ala	Lys	Val	Arg	Ser	Gln	Glu
	675						680						685		
Asn	Ser	Tyr	Gln	Ser	Arg	Leu	Asp	Asp	Leu	Lys	Met	Thr	Val	Glu	Arg
	690					695					700				
Val	Arg	Ala	Leu	Gly	Ser	Gln	Tyr	Gln	Asn	Arg	Val	Arg	Asp	Thr	His
705					710					715					720
Arg	Leu	Ile	Thr	Gln	Met	Gln	Leu	Ser	Leu	Ala	Glu	Ser	Glu	Ala	Ser
			725						730					735	
Leu	Gly	Asn	Thr	Asn	Ile	Pro	Ala	Ser	Asp	His	Tyr	Val	Gly	Pro	Asn
		740						745					750		
Gly	Phe	Lys	Ser	Leu	Ala	Gln	Glu	Ala	Thr	Arg	Leu	Ala	Glu	Ser	His
	755						760						765		

Val	Glu	Ser	Ala	Ser	Asn	Met	Glu	Gln	Leu	Thr	Arg	Glu	Thr	Glu	Asp	770	775	780
Tyr	Ser	Lys	Gln	Ala	Leu	Ser	Leu	Val	Arg	Lys	Ala	Leu	His	Glu	Gly	785	790	795
Val	Gly	Ser	Gly	Ser	Gly	Ser	Pro	Asp	Gly	Ala	Val	Val	Gln	Gly	Leu	805	810	815
Val	Glu	Lys	Leu	Glu	Lys	Thr	Lys	Ser	Leu	Ala	Gln	Gln	Leu	Thr	Arg	820	825	830
Glu	Ala	Thr	Gln	Ala	Glu	Ile	Glu	Ala	Asp	Arg	Ser	Tyr	Gln	His	Ser	835	840	845
Leu	Arg	Leu	Leu	Asp	Ser	Val	Ser	Arg	Leu	Gln	Gly	Val	Ser	Asp	Gln	850	855	860
Ser	Phe	Gln	Val	Glu	Glu	Ala	Lys	Arg	Ile	Lys	Gln	Lys	Ala	Asp	Ser	865	870	875
Leu	Ser	Thr	Leu	Val	Thr	Arg	His	Met	Asp	Glu	Phe	Lys	Arg	Thr	Gln	885	890	895
Lys	Asn	Leu	Gly	Asn	Trp	Lys	Glu	Glu	Ala	Gln	Gln	Leu	Leu	Gln	Asn	900	905	910
Gly	Lys	Ser	Gly	Arg	Glu	Lys	Ser	Asp	Gln	Leu	Leu	Ser	Arg	Ala	Asn	915	920	925
Leu	Ala	Lys	Ser	Arg	Ala	Gln	Glu	Ala	Leu	Ser	Met	Gly	Asn	Ala	Thr	930	935	940
Phe	Tyr	Glu	Val	Glu	Ser	Ile	Leu	Lys	Asn	Leu	Arg	Glu	Phe	Asp	Leu	945	950	955
Gln	Val	Asp	Asn	Arg	Lys	Ala	Glu	Ala	Glu	Glu	Ala	Met	Lys	Arg	Leu	965	970	975
Ser	Tyr	Ile	Ser	Gln	Lys	Val	Ser	Asp	Ala	Ser	Asp	Lys	Thr	Gln	Gln	980	985	990
Ala	Glu	Arg	Ala	Leu	Gly	Ser	Ala	Ala	Ala	Asp	Ala	Gln	Arg	Ala	Lys	995	1000	1005
Asn	Gly	Ala	Gly	Glu	Ala	Leu	Glu	Ile	Ser	Ser	Glu	Ile	Glu	Gln	Glu	1010	1015	1020
Ile	Gly	Ser	Leu	Asn	Leu	Glu	Ala	Asn	Val	Thr	Ala	Asp	Gly	Ala	Leu	1025	1030	1035
Ala	Met	Glu	Lys	Gly	Leu	Ala	Ser	Leu	Lys	Ser	Glu	Met	Arg	Glu	Val	1045	1050	1055
Glu	Gly	Glu	Leu	Glu	Arg	Lys	Glu	Leu	Glu	Phe	Asp	Thr	Asn	Met	Asp	1060	1065	1070
Ala	Val	Gln	Met	Val	Ile	Thr	Glu	Ala	Gln	Lys	Val	Asp	Thr	Arg	Ala	1075	1080	1085
Lys	Asn	Ala	Gly	Val	Thr	Ile	Gln	Asp	Thr	Leu	Asn	Thr	Leu	Asp	Gly	1090	1095	1100
Leu	Leu	His	Leu	Met	Asp	Gln	Pro	Leu	Ser	Val	Asp	Glu	Glu	Gly	Leu	1105	1110	1115
Val	Leu	Leu	Glu	Gln	Lys	Leu	Ser	Arg	Ala	Lys	Thr	Gln	Ile	Asn	Ser	1125	1130	1135
Gln	Leu	Arg	Pro	Met	Met	Ser	Glu	Leu	Glu	Glu	Arg	Ala	Arg	Gln	Gln	1140	1145	1150
Arg	Gly	His	Leu	His	Leu	Leu	Glu	Thr	Ser	Ile	Asp	Gly	Ile	Leu	Ala	1155	1160	1165
Asp	Val	Lys	Asn	Leu	Glu	Asn	Ile	Arg	Asp	Asn	Leu	Pro	Pro	Gly	Cys	1170	1175	1180
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35 40 45
Ser Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn Thr Ala Gly Val His
50 55 60
Cys Glu Arg Ser Arg Glu Gly Phe Tyr Gln His Gln Ser Lys Ser Arg
65 70 75 80
Cys Leu Pro Cys Asn Cys His Ser Lys Gly Ser Leu Ser Ala Gly Cys
85 90 95
Asp Asn Ser Gly Gln Cys Arg Cys Lys Pro Gly Val Thr Gly Gln Arg
100 105 110
Cys Asp Gln Cys Gln Pro Gly Phe His Met Leu Thr Asp Ala Gly Cys
115 120 125
Thr Arg Asp Gln Gly Gln Leu Asp Ser Lys Cys Asp Cys Asp Pro Ala
130 135 140
Gly Ile Ser Gly Pro Cys Asp Ser Gly Arg Cys Val Cys Lys Pro Ala
145 150 155 160
Val Thr Gly Glu Arg Cys Asp Arg Cys Arg Pro Arg Asp Tyr His Leu
165 170 175
Asp Arg Ala Asn Pro Glu Gly Cys Thr Gln Cys Phe Cys Tyr Gly His
180 185 190
Ser Ala Ser Cys His Ala Ser Ala Asp Phe Ser Val His Lys Ile Thr
195 200 205
Ser Thr Phe Ser Gln Asp Val Asp Gly Trp Lys Ala Val Gln Arg Asn
210 215 220
Gly Ala Pro Ala Lys Leu His Trp Ser Gln Arg His Arg Asp Val Phe
225 230 235 240
Ser Ser Ala Arg Arg Ser Asp Pro Val Tyr Phe Val Ala Pro Ala Lys
245 250 255
Phe Leu Gly Asn Gln Gln Val Ser Tyr Gly Gln Ser Leu Ser Phe Asp
260 265 270
Tyr Arg Val Asp Arg Gly Gly Arg Gln Pro Ser Ala Tyr Asp Val Ile
275 280 285
Leu Glu Gly Ala Gly Leu Gln Ile Arg Ala Pro Leu Met Ala Pro Gly
290 295 300
Lys Thr Leu Pro Cys Gly Ile Thr Lys Thr Tyr Thr Phe Arg Leu Asn
305 310 315 320
Glu His Pro Ser Ser His Trp Ser Pro Gln Leu Ser Tyr Phe Glu Tyr
325 330 335
Arg Arg Leu Leu Arg Asn Leu Thr Ala Leu Leu Met Ile Arg Ala Thr
340 345 350
Tyr Gly Glu Tyr Ser Thr Gly Tyr Ile Asp Asn Val Thr Leu Val Ser
355 360 365
Ala Arg Pro Val Leu Gly Ala Pro Ala Pro Trp Val Glu Arg Cys Val
370 375 380
Cys Leu Leu Gly Tyr Lys Gly Gln Phe Cys Gln Glu Cys Ala Ser Gly
385 390 395 400

Tyr Lys Arg Asp Ser Ala Arg Leu Gly Ala Phe Gly Ala Cys Val Pro
 405 410 415
 Cys Asn Cys Gln Gly Glu Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys
 420 425 430
 Tyr Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile
 435 440 445
 Gly Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro
 450 455 460
 Cys His Asn Gly Phe Ser Cys Ser Val Met Pro Glu Thr Glu Glu Val
 465 470 475 480
 Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu
 485 490 495
 Cys Ala Asp Gly Phe Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val
 500 505 510
 Arg Pro Cys Gln Arg Cys Gln Cys Asn Asn Asn Val Asp Pro Asn Ala
 515 520 525
 Ser Gly Asn Cys Asp Gln Leu Thr Gly Arg Cys Leu Lys Cys Ile Tyr
 530 535 540
 Asn Thr Ala Gly Val Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly
 545 550 555 560
 Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys
 565 570 575
 Ser Pro Met Gly Ala Glu Pro Gly Glu Cys Arg Gly Asp Gly Ser Cys
 580 585 590
 Val Cys Lys Pro Gly Phe Gly Ala Phe Asn Cys Asp His Ala Ala Leu
 595 600 605
 Thr Ser Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln
 610 615 620
 Phe Thr Gln Gln Leu Gln Ser Leu Glu Ala Leu Val Ser Lys Ala Gln
 625 630 635 640
 Gly Gly Gly Gly Gly Gly Thr Val Pro Val Gln Leu Glu Gly Arg Ile
 645 650 655
 Glu Gln Ala Glu Gln Ala Leu Gln Asp Ile Leu Gly Glu Ala Gln Ile
 660 665 670
 Ser Glu Gly Ala Met Arg Ala Val Ala Val Arg Leu Ala Lys Ala Arg
 675 680 685
 Ser Gln Glu Asn Asp Tyr Lys Thr Arg Leu Asp Asp Leu Lys Met Thr
 690 695 700
 Ala Glu Arg Ile Arg Ala Leu Gly Ser Gln His Gln Asn Arg Val Gln
 705 710 715 720
 Asp Thr Ser Arg Leu Ile Ser Gln Met Arg Leu Ser Leu Ala Gly Ser
 725 730 735
 Glu Ala Leu Leu Glu Asn Thr Asn Ile His Ser Ser Glu His Tyr Val
 740 745 750
 Gly Pro Asn Asp Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Lys Ala
 755 760 765
 Asp Ser His Ala Glu Ser Ala Asn Ala Met Lys Gln Leu Ala Arg Glu
 770 775 780
 Thr Glu Asp Tyr Ser Lys Gln Ala Leu Ser Leu Ala Arg Lys Leu Leu
 785 790 795 800
 Ser Gly Gly Gly Gly Ser Gly Ser Trp Asp Ser Ser Val Val Gln Gly
 805 810 815
 Leu Met Gly Lys Leu Glu Lys Thr Lys Ser Leu Ser Gln Gln Leu Ser
 820 825 830
 Leu Glu Gly Thr Gln Ala Asp Ile Glu Ala Asp Arg Ser Tyr Gln His
 835 840 845
 Ser Leu Arg Leu Leu Asp Ser Ala Ser Gln Leu Gln Gly Val Ser Asp

850	855	860
Leu Ser Phe Gln Val Glu Ala Lys Arg Ile Arg Gln Lys Ala Asp Ser		
865	870	875
Leu Ser Asn Leu Val Thr Arg Gln Thr Asp Ala Phe Thr Arg Val Arg		880
	885	890
Asn Asn Leu Gly Asn Trp Glu Lys Glu Thr Arg Gln Leu Leu Gln Thr		895
	900	905
Gly Lys Asp Arg Arg Gln Thr Ser Asp Gln Leu Leu Ser Arg Ala Asn		910
	915	920
Leu Ala Lys Asn Arg Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr		925
	930	935
Phe Tyr Glu Val Glu Asn Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu		940
945	950	955
Gln Val Glu Asp Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu		960
	965	970
Ser Ser Ile Ser Gln Lys Val Ala Asp Ala Ser Asp Lys Thr Gln Gln		975
	980	985
Ala Glu Thr Ala Leu Gly Ser Ala Thr Ala Asp Thr Gln Arg Ala Lys		990
	995	1000
Asn Ala Ala Arg Glu Ala Leu Glu Ile Ser Ser Glu Ile Glu Leu Glu		1005
1010	1015	1020
Ile Gly Ser Leu Asn Leu Glu Ala Asn Val Thr Ala Asp Gly Ala Leu		
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Ala Met Glu Lys Gly Thr Ala Thr Leu Lys Ser Glu Met Arg Glu Met		1040
	1045	1050
Ile Glu Leu Ala Arg Lys Glu Leu Glu Phe Asp Thr Asp Lys Asp Thr		1055
	1060	1065
Val Gln Leu Val Ile Thr Glu Ala Gln Gln Ala Asp Ala Arg Ala Thr		1070
	1075	1080
Ser Ala Gly Val Thr Ile Gln Asp Thr Leu Asn Thr Leu Asp Gly Ile		1085
	1090	1095
Leu His Leu Ile Asp Gln Pro Gly Ser Val Asp Glu Glu Gly Met Met		1100
1105	1110	1115
Leu Leu Glu Gln Gly Leu Phe Gln Ala Lys Thr Gln Ile Asn Ser Arg		1120
	1125	1130
Leu Arg Pro Leu Met Ser Asp Leu Glu Glu Arg Val Arg Arg Gln Arg		1135
	1140	1145
Asn His Leu His Leu Leu Glu Thr Ser Ile Asp Gly Ile Leu Ala Asp		1150
	1155	1160
Val Lys Asn Leu Glu Asn Ile Arg Asp Asn Leu Pro Pro Gly Cys Tyr		1165
	1170	1175
Asn Thr Gln Ala Leu Glu Gln Gln		1180
1185	1190	